

## The Mystery of Tiahuanaco

Compiled and Digitized by Glen W. Chapman-November 2003

. Just 12 miles southward of the southernmost tip of Lake Titicaca lie the remains of Tiahuanaco, the site of a technologically advanced culture considered by many archaeologists (romantic not orthodox) to be the oldest ruins in the world. Although some misguided scholars have attributed the buildings of Tiahuanaco to the Incas, it has now been established that the city was already in ruins when the first Incas came upon the scene.

In 1540 the Spanish chronicler, Pedro Cieza de Leon, visited the area and his description of the statues and monoliths compares very closely to what we see today.

The site is at an altitude of 13,300 feet, which places it some 800 feet above the present level of Lake Titicaca.

Most archaeologists agree that in the distant past Tiahuanaco was a flourishing port at the edge of the lake, which means that the water has receded almost 12 miles and has dropped about 800 feet since then. All concur that the lake is shrinking, due mainly to evaporation, since no rivers flow from it.

The Tiahuanaco culture, as it is called, is unique in its sculpture and its style of stone construction.

The figures depicted in the statuary have a rather square head with some covering like a helmet; they have square eyes and a rectangular mouth.

The stone works at the ruins consist of such structures as the Gate of the Sun, a portal carved from a single block of stone weighing 15 tons.

The stone steps of the Kalasasaya, each of which is a rectangular block of stone about 30 feet wide.

The so-called idols, which are giant about 23 feet tall representatives of unusual looking beings with typical Tiahuanaco head and trace, and the enormous monolithic stone blocks, many of which appear to have been cast rather than carved, are some of these unusual features.

At the area called Puma Punku, which is about 1 mile distant from the principal part of the ruins, the gigantic stones are bluish-gray in color and appear to have been machined, and they have a metallic ring when tapped by a rock.

There is also a reddish rust or oxidation covering many of the stones. Many of these enormous stone blocks probably have not been moved since they fell thousands of years ago.

Archaeologists however speculate that the stones were dressed, but never erected that the construction for which they were intended was interrupted.

It is equally valid, however, to assume that the buildings were completed and then toppled by some natural catastrophe, such as the eruption of the Andes mountain chain or a world-wide deluge.

It is interesting to observe the archaeological excavation work, which is under way at the site. At this altitude of 13,300 feet some of the remains are found at a level 6 feet below the earth's surface. The mountain ranges which surround the area are not high enough to permit sufficient runoff of water or wind erosion to have covered the ruins to such a depth.

This remains a mystery to this day.

Legends have persisted over the centuries that there are stone structures beneath the waters of Lake Titicaca, much the same kind as can be found on the lake's shore.

The Indians of that legion have frequently recounted this tradition, but until recently there has been no proof of such structures.

In 1968 Jacques Cousteau, the French underwater explorer, took his crew and equipment there to explore the lake and search for evidence of underwater construction.

Although severely hampered in their activities by the extreme altitude, the divers spent many days searching the lake bottom, in the vicinity of the islands of the Sun and Moon, but found nothing man-made. Cousteau concluded the legends were a myth.

In November 1980, however, the well known Bolivian author and scholar of pre-Columbian cultures, Hugo Boero Rojo, announced the finding of archaeological ruins beneath Lake Titicaca about 15 to 20 meters below the surface off the coast of Puerto Acosta, a Bolivian port village near the Peruvian frontier on the northeast edge of the lake.

Based upon information furnished by Elias Mamani, a native of the region who is over 100 years old, Boero Rojo and two Puerto Ricans cinematographers, Ivan and Alex Irrizarry, were able to locate the ruins after extensive exploration of the lake bottom in the area, while filming a documentary on the nearby Indians.

Rojo stated, "We can now say that the existence of pre-Columbian constructions under the waters of Lake Titicaca is no longer a mere supposition or science-fiction, but a real fact. The remnants found show the existence of old civilizations that greatly antecede the Spanish colonization. We have found temples built of huge blocks of stone, with stone roads leading to unknown places and flights of steps whose bases were lost in the depths of the lake amid a thick vegetation of algae. Boero Rojo described these monumental ruins as being of probable Tiahuanaco origin."

Polish-born Bolivian archaeologist Arturo Posnansky has concluded that the Tiahuanaco culture began in the region at about 1600 B.C. and flourished until at least 1200 A.D.

His disciple, Professor Hans Schindler-Bellamy, believed Tiahuanaco to have reached back 12,000 years before the present era, although a more conservative Peruvian archaeologist.

What happened to the advanced ancient culture, however, has not yet been determined.

Rojo's discovery nevertheless may prove to create more problems than it solves. If, over the past 3 or 4000 years Lake Titicaca has slowly receded, as appears to be the case-as all scientists agree, then how can we explain the existence of stone temples, stairways, and roads still under water'?

The only answer is that they were built before the lake materialized.

We must go back, then, to the remnants of Tiahuanaco and re-examine the more than 400 acres of ruins, only 10 percent of which have been excavated.

We have pointed out that dirt covers the ancient civilization to a depth of at least 6 feet.

The only explanation for this accumulation is water.

A large amount of water had to have inundated the city. When it receded it left the silt covering all evidence of an advanced civilization, leaving only the largest statues and monoliths still exposed.

It is logical to conclude, therefore, that Tiahuanaco was built before the lake was created, and not as a port on its shore. As the waters today continue to recede, we should be able to find more evidence of the city's remote peoples.

Scientists theorize that the area of Lake Titicaca was at one time at sea level, because of the profusion of fossilized marine life which can be found in the region.

The area then lifted with the Andean upheaval and a basin was created which filled in to form the lake. No one has suggested the marine life might have been brought to the altiplano by sea waters which were at flood stage.

Peruvian legends clearly relate a story of world-wide flood in the distant past.

Whether it was the biblical flood of Noah, or another one, we cannot say, but there is ample physical evidence of a universal inundation, with the world-wide deluge described in more than a hundred flood-myths.

Along with Noah's flood were the Babylonian Utnapishtim of the Gilgamesh epic, the Sumerian Ziusudra, the Persian Jima, the Indian Manu, the Maya Coxcox, the Colombian Bochica, the Algonkin's Nanabozu, the Crows' Coyote, the Greek Deukalion and Pyrrha, the Chinese Noah Kuen, and the Polynesian Tangaloa. It is evident there was a world-wide deluge 19,000 years ago.

(Global doomsdays are conspicuous in the Hopi Indian legends, the Finnish Kalevala epic, the Mayan Chilam Balam and Popol Vuh, and in the Aztec calendar, the last of which predicts that our present civilization will be destroyed by "nahuatl Olin" or "earth movement," that is, devastation by earthquake.

Due to Aztec cyclic theory this will become the fifth doomsday after the "death of the Jaguars," "the death of the Tempests," "the death of the Great Fire" (vulcanism), and the 'Great Deluge.'

If a flourishing advanced civilization existed on the Peruvian altiplano many thousands of years ago and was reached by the flood waters, many problems would be solved, such as the existence of Tiahuanaco's ruins under 6 feet of earth at an elevation of 13,300 feet.

The presence of stone structures still under the lake's waters and the existence of marine life at an impossible altitude would also make sense.

In my 1978 and 1984 trips to Peru I was impressed by agricultural terracing on the sides and very tops of the steep peaks.

These appear to be the oldest - and now unused- portions of the terracing. As you look down the mountains you see more and more terraces of more recent origin.

We are told that only the Inca (specifically the Sapai Inca, i.e. the ruler) could use the lower portions and the fertile valleys. The peons had to climb to the very peaks to cultivate the soil for their own subsistence.

This seems highly unlikely in what we know to have been a pure communistic-theocratic society.

Pondering the logistics involved, I see no problem with the spring planting.

It would not be difficult to carry a sack of seed to the mountain tops, scratch out some of the soil, and plant them.

But then, I wondered, it must have been very tough in the fall to carry the harvest 2 to 3000 feet down to the valley floor.

Then it struck me.

If there really had been a world-wide deluge covering most of the earth's surface - leaving only mountain tops protruding in the sunlight - then the few remaining survivors of the deluge would naturally plant their seeds on mountain tops.

They had no problem getting produce down, because they lived at the top.

Also, they used boats to move from one peak to another.

As the flood waters receded the terracing began to creep down the mountain sides, as can be seen today, with the ones near the bottom being the freshest.

As Boero Rojo stated, "The discovery of Aymara structures under the waters of Lake Titicaca could pose entirely new theses on the disappearance of an entire civilization, which, for some unknown reason, became submerged.

The Tiahuanacans could have been victims of world-wide flood, their civilization all but wiped out when their homes and structures were covered with sea water.

Because of the basin-like geography of the area the flood waters that became Lake Titicaca could not run off and have only gradually evaporated over the centuries.

Professor Schindler-Bellamy as a disciple of Posnansky and Horbiger (who created the world famous Glacial-Cosmogony theory in the 1930's - has worked dozens of years in the Tiahuanaco area and has written books on the subject.

According to him the large monolithic Sun Gate of Tiahuanaco was evidently originally the centerpiece of the most important part of the so-called Kalasasaya, the huge chief temple of Tiahuanaco. Its upper part is covered with a stupendously intricate sculpture in flat bas relief.

This has been described as a "calendar" almost as long as the monolithic gateway has been known to exist; thus the Sun Gate has also been called 'the Calendar Gate'.

This calendar sculpture, though it undoubtedly depicts a "solar year," cannot however be made to fit into the solar year as we divide it at present.

After many futile attempts had been made, by employing a Procrustean chopping off of toes or heels to make the calendar work, the sculpture - which indeed has a highly decorative aspect - was eventually declared generally to be nothing but an intricate piece of art.

Professor Schindler-Bellamy and the American astronomer Allen have nevertheless continued to insist the sculpture was a calendar, though one of a special kind, designed for special purpose, and, of course, for a special time.

Hence it must refer exclusively to the reckoning of that time, and to certain events occurring then. Consequently we cannot make the calendar "speak" in terms of our own time, but let it speak for itself - and listen to what it says and learn from it. When we do so we gain an immense insight into the world of the people of that era, into the manner of thinking of their intellectuals, and generally into the way their craftsmen and laborers lived and worked.

To describe these things in detail would make a long story; it took 1) R. Allen and Professor Schindler-Bellamy and their helpers many years of hard work to puzzle out the Tiahuanaco system of notation and its symbology, and to make the necessary calculations (before the age of computers). The result was a book of over 400 pages, *The Calendar of Tishuanaco*, published in 1956.

Thorough analysis of the Sun Gate sculpture revealed the astonishing fact that the calendar is not a mere list of days for the "man in the street" of the Tiahuanaco of that time, telling him the dates of market days or holy days; it is actually, and pre-eminently a unique depository of astronomical, mathematical, and scientific data - the quintessence of the knowledge of the bearers of Tiahuanacan culture.

The enormous amount of information the calendar has been made to contain - and to impart to anyone ready and able to read it is communicated in a way that is, once the system of notation has been grasped, singularly lucid and intelligible, "counting by units of pictorial or abstract form.

The different forms of those units attribute special, very definite and important additional meanings to them, and make them do double or multiple duty. By means of that method "any number" can be expressed without employing definite "numerals" whose meaning might be difficult, if not impossible, to establish.

"It is only necessary to recognize the units and consider their forms, and find their groupings, count them out, and render the result in our own numerical notation.

Some of the results seem to be so unbelievable that superficial critics have rejected them as mere arrant nonsense. But they are too well dove-tailed and geared into the greater system (and in some cases supported by peculiar repetitions and cross-references) to be discarded in disgust; one has to accept them as correct.

Whoever rejects them, however, also accepts the onus of offering a better explanation, and Professor Schindler-Bellamy has the "advantage of doubt," at any rate.

The "solar year" of the calendar's time had very practically the same length as our own, but, as shown symbolically by the sculpture, the earth revolved more quickly then, making the Tiahuanacan year only 290 days, divided into 12 "twelfths" of 94 days each, plus 2 intercalary days.

Tilese groupings (290, 24, 12, 2) are clearly and unmistakably shown in the sculpture. The explanation of 290 versus  $365\frac{1}{4}$  days cannot be discussed here.

At the time Tiahuanaco flourished the present moon was not yet the companion of our earth but was still an independent exterior planet.

There was another satellite moving around our earth then, rather close-5.9 terrestrial radii, center to center; our present moon being at 60 radii. Because of its closeness it moved around the earth more quickly than our planet rotated.

Therefore it rose in the west and set in the east (like Mars' satellite Phobos), and so caused a great number of solar eclipses, 37 in one "twelfth," or 447 in one "solar year " of course it caused an equal number of satellite eclipses. These groupings (37, 447) are shown in the sculpture, with many Corroborating cross-references. Different symbols show when these solar eclipses, which were of some duration, occurred: at sunrise, at noon, at sunset.

These are only a small sample of the exact astronomical information the calendar gives. It also gives the beginning of the year, the days of the equinoxes and solstices, the incidence of the two intercalary days, information on the obliquity of the elliptic (then about 16.5 degrees; now 23.5) and on Tiahuanaco's latitude (then about 10 degrees; now 16.27), and many other astronomical and geographical references from which interesting and important data may be calculated or inferred by us.

Tiahuanacan scientists certainly knew, for instance, that the earth was a globe which rotated on its axis (not that the sun moved over a flat earth), because they calculated exactly the times of eclipses not visible at Tiahuanaco but visible in the opposite hemisphere (One wonders whether they were actually able to travel around the world, and speculate in what sort of vessel ! )

A few more facts revealed in the calendar are both interesting and surprising As indicated by an arrangement of "geometrical" elements we can ascertain that the Tiahuanacans divided the circle factually astronomically, but certainly mathematically } into 264 degrees (rather than 360).

Also, they determined-ages before Archimedes and the Egyptians the ratio of pi, the most important ratio between the circumference of the circle and its diameter, as  $22/7$ , or, in our notation, 3.14+. They could calculate squares (and hence, square roots).

They knew trigonometry and the measuring of angles (30, 60, 90 degrees) and their functions- They could calculate and indicate fractions, but do not seem to have known the decimal system nor did they apparently ever employ the duodecimal system though they were aware of it.

(For a still unknown reason, however, the number 11 and its multiples occur often.) They were able to draw absolutely straight lines and exact right angles, but no mathematical instruments have yet been found.

We must take notice of the evident parallels with the markings of the Nasca Plain. We do not know the excellent tools they must have used for working the glass-hard andesite stone of their monuments, cutting, polishing, and incising.

They must have employed block and tackle for lifting and transporting great loads (up to 200 tons) over considerable distances and even over expanses of water from the quarries to the construction sites.

It is difficult to see how all the calculations, planning, and design work involved in producing the great city of Tiahuanaco could have been done without some form of writing, and without a system of notation different from the "unit" system of the calendar sculpture.

If they had such a system they must have used it only on perishable materials.

I have so far dealt with some of the aspects of the Tiahuanacan world, namely those connected with the calendar as a monument of what Schindler-Bellamy describes as "fossilized science."

But the calendar science-sculpture, and similar slightly older ones also found at the site, must also be regarded and appreciated from an aesthetic point of view, a great artistic achievement in design and execution-and an absolute masterpiece of arrangement and layout.

The most tantalizing fact of all is that the Tiahuanaco culture has no roots in that area. It did not grow there from humbler beginnings, nor is any other place of origin known. It seems to have appeared practically full blown suddenly.

Only a few "older" monuments, as can be inferred from the "calendrical inscriptions" they bear, have been found, but the difference in time cannot have been very great.

The different-much lower cultures discovered at considerable distances from Tiahuanaco proper, addressed as "Decadent Tiahuacan" or as "Coastal Tiahuanaco," are only very indirectly related to the culture revealed by the Calendar Gate. Some of their painted symbols are somehow somewhat related to the calendar symbols, but they make no sense whatever; they are, if anything, purely ornamental.

Tiahuanaco apparently remained for only a very short period at its acme of perfection (evidenced by the Calendar Gate) and perished suddenly, perhaps through the cataclysmic happenings connected with the breakdown of the former "moon."

We have at present no means of determining when Tiahuanaco rose to supreme height, or when its culture was obliterated, as naturally, the calendar itself can tell us nothing about that.

It will certainly not have been in the historical past but well back in the prehistoric.

The capture of the satellite and its later fall to the surface on our planet imposed great stresses on the earth. The gravitational pull caused floods and earthquakes until the moon settled into a stable orbit one-fifth of today's distance.

Hence the "moon" draws the oceans into a belt or bulge around the equator, drowning the equatorial region but leaving the polar lands high and dry.

When the satellite approached within a few thousand miles gravitational forces broke it up; according to the Roche formula each planetoid or asteroid disintegrates when approaching the critical distance of 50 to 60,000 kms.

The fragments shattered down on earth; the oceans, released from the satellite's gravity, flowed back toward the continents, exposing tropical lands and submerging polar territories. This is the simple explanation of the Horbiger theory, and it seems to me the most logical one.

Thus the approach of the "moon" caused a world-wide deluge, effecting changes of climate and provoking earthquakes accompanied by volcanic eruptions.

The "ring" left by the satellite after breaking into fragments caused a sudden drop in temperature of at least 20 degrees, which geologists recognize as in a decline in temperature. It is evident, for example, in the discovery of frozen mammoths in the Siberian tundra.

Possibly gravity-and therefore physical weight - was also changed on earth, and with it biological growth: this would explain the widespread construction of huge megalithic monuments as well as the presence of giants-man and animal-in fossil strata, tombs, and myths.

According to Horbiger four moons fell on earth, producing four Ice Ages; our present moon, the fifth one, will similarly be drawn into the critical configuration of one-fifth of its present distance (380,000 kms.) and will cause the fifth cataclysm. (Remember the Aztec calendar's prediction of doomsday by earthquake!)

The theory of a falling moon has recently been substantiated by Dr. John O'Keefe, a scientist at the Goddard Laboratory for Astronomy in Maryland. Dr. O'Keefe claims that the fragments of a moon's collision formed a ring around our planet that could have kept the sun's rays from penetrating to earth, thus causing world-wide decline of temperatures.

After a while the fragments showered down on earth, breaking into smithereens known as tectites.

These tectites O'Keefe believes were fragments of the fallen moon, thus proving Horbiger's *World-Ice-Cosmology*.

The Calendar Gate shows that a far-advanced culture made a substantial attempt to plant its society at Tiahuanaco, wanting to revitalize this region which had already been devastated by floods caused by a close satellite.



Their attempt eventually miscarried, because they had underestimated certain dangerous developments that ultimately happened contrary to all expectations and calculations.

Such world-wide cataclysms appear in myth:

- the Egyptian Papyrus Ipuwer ("The sun set where it rose")
- the tomb of Senmut (showing Orion-Sirius painted in reverse position)
- the Finnish Kalevala ("the earth turned round like a potter's wheel"),
- the Popol Vuh (describing fire showering down from heaven)

This indicates that our planet more than once has suffered world-wide catastrophe.

### **Tiahuanaco, Bolivia**

Tiahuanaco - also Tiwanaku - is in the Bolivian Andes lying 12,500 feet (over 2 miles) above sea-level. It is located some 15 miles from the shores of Lake Titicaca.

As with many other sacred sites on the planet it remains an enigma allowing researchers to speculate on its origins and purpose - then paralleling their conclusions with other ancient civilizations - on other major grids points of the planet - left behind by unknown beings - surviving in time - with great stone markers which bear clues to humanity's creational story. Gods, temples, idols, metaphors - all clues in a puzzle humanity is unraveling at this time of conscious awakening.

Tiahuanaco was the capital of the Pre-Inca Civilization. This could be the oldest city in the world, thought by some to be built by an extraterrestrial race who created the Nazca Lines as well.

Strangely, Tiahuanacu was a seaport at one time, although the nearest body of water is Lake Titicaca. There are many theories on how this came to be - mostly lined to changes in sea level through the millennia.

On the rock cliffs near the piers and warfs of the port area of the ruins are yellow-white calcareous deposits forming long, straight lines indicating pre-historic water levels. These ancient shorelines are strangely tilted, although once they must have been level. The surrounding area is covered with millions of fossilized sea-shells. It appears, from the tilting of the ancient shoreline striations and the abundant presence of fossilized oceanic flora and fauna, that a tremendous uplift of land has taken place sometime in the ancient past. Oceanic creatures live to this day in abundance in the salty waters of the lake, indicating that it was once a part of the ocean, although it is now over 2 miles above sea-level. What seems to be the original seashore is much higher in one place than in another. The port of Tiahuanacu, called Puma Punku or "Door of the Puma," is an area filled with enormous stone blocks scattered hither and yon like matchsticks, and weighing between 100 and 150 tons! One block still in place weighs an estimated 440 tons! One wonders, how were these blocks quarried; also how did the builders handle such huge blocks so skillfully? And what tremendous forces tumbled and scattered these gigantic stones so easily about the site? Many of the blocks, some of them weighing upwards of 200 tons, are held together by large copper clamps shaped like an I, rather than enter-locking shapes as at Sacsahuaman or at Cuzco. Others were held together by silver rivets. The system used here is reminiscent of that used in the Egyptian ruins on Elephantine Island on the Nile. Most researchers believe that the metal was actually poured into shaped-slots carved into the rock.

Some of the docks and piers in this area are so large that hundreds of ships could dock comfortably - and nothing oceanic near these docks except an ancient coastline made of chalky fossils. Lake Titicaca, languishing miles away, is nearly 100 feet lower than the ruined docks. What tremendous geological upheaval has occurred in the last thousand years that could have tumbled these huge stones while raising the entire altiplano region 2 miles into the sky? None that anyone knows about - but 12,000 years ago might have been a different story.

Tiahuanaco was the center of a powerful, self-sustaining empire. The roots of the Tiahuanaco capital can be found in the early village underlying the 1.5-square-mile civic-ceremonial core. The city was settled by 400 B. C. on the Tiahuanaco River, which empties into Lake Titicaca 9.3 miles to the north. The small farming village evolved into a regal city of multi-terraced platform pyramids, courts and urban areas, covering a total 2.31 square miles

Traditionally it is thought to have been built by the predecessors of the Inca Civilization over 2,000 years ago. It is a mysterious ruined city of extremely ancient origins. Around the turn of the 20th century Bolivian scholar Arthur Broznansky began a fifty year study of the ruins of Tiahuanaco. Using astronomical information, he concluded that the city was constructed more than 17,000 years ago long before any civilization was supposed to have existed. He called Tiahuanaco the 'Cradle of Civilization'.

While restoring the city, huge staples were found between the stones. A groove was carved in the edge and molten liquids were poured within, which hardened, forming this staple.

Tiahuanaco society was self-sustaining, for its agricultural, herding, and fishing resource base was more than sufficient to support the complex state administrative apparatus and the population under its control. The Tiahuanaco Empire collapsed between 1000 and 1100 A. D. It was a magnificent royal city that was calculated to inspire awe in the commoners. The walls of the temples and the stone monolithic statues and gateways are now shorn of their gold, textiles, and painted surfaces, which for centuries had shimmered from afar in the bright sunlight.

Little is known of the 30,000 to 60,000 urban dwellers or of the city's crafts or administrative functions. We also know little about the storage system that was required for the bounty of surplus foods from the agricultural fields, the vast llama herds on the Poona, and the abundant fish caught in the lake. The core of this imperial capital was surrounded by a moat that restricted access to the temples and areas frequented by royalty.

Tiahuanaco fell from prominence after Lake Titicaca's water level lowered and the shoreline receded from the city. Today the waters are many miles away.

The 10 ton Gateway of the Sun is monolithic, carved from a single block of Andesite granite, and is broken right down the center. Its upper portion is deeply carved with beautiful and intricate designs, including a human figure, condors, toxodons, elephants and some symbols. Directly in the center of the gate is the so-called "Sun-god," Viroacochoa, with rays shooting from his face in all directions. He is holding a stylized staff in each hand which may represent thunder and lightning. He is sometimes referred to as the "weeping god" because tears are on his cheeks. The figures flanking the centerpiece are themselves unfinished, leading investigators to wonder what could have interrupted the craftsmen working on the gate that it was left unfinished. This monolith, when first discovered, was broken in half, and was lying askew deep in silt until

restored to its proper position in 1908. The Sun Gate now stands in the northwest corner of the Kalasasaya temple.

Legends of the Aymara Indians say that the Creator God Viracocha rose from Lake Titicaca during the time of darkness to bring forth light. Viracocha was a storm god and a sun god who was represented as wearing the sun for a crown, with thunderbolts in his hands, and tears descending from his eyes as rain. He wandered the earth disguised as a beggar and wept when he saw the plight of the creatures he had created, but knew that he must sustain them. Viracocha made the earth, the stars, the sky and mankind, but his first creation displeased him, so he destroyed it with a flood and made a new, better one, taking to his wanderings as a beggar, teaching his new creations the rudiments of civilisation, as well as working numerous miracles. Viracocha eventually disappeared across the Pacific Ocean (by walking on the water), setting off near Manta Ecuador, and never returned. It was thought that Viracocha would re-appear in times of trouble. References are also found of a group of men named the suncasapa or bearded ones - they were the mythic soldiers of Viracocha, aka the 'angelic warriors of Viracocha'.

The famous carved figure on the decorated archway in the ancient (pre-Incan) city of Tiahuanaco, known as the "Gateway of the Sun," most likely represents Viracocha, flanked by 48 winged effigies, 32 with human faces and 16 with condor's heads. This huge monument is hewn from a single block of stone, and some believe that the strange symbols might represent a calendar, the oldest in the world. A huge monolithic figure, facing east in the direction of sunrise, stands as silent witness to an unknown civilization established around 2200 years ago.

The entrance side of the Portal of the Sun atop the Kalasaya mound. The entire upper panel is intricately carved with a repeating pattern of the images seen in the view above. The monolith has broken and was found partially downfallen in modern times. It has been restored to its original position. The fissure is visible above the right corner of the doorway.

The megalithic entrance to the Kalasaya mound is here seen from the Sunken Courtyard viewing west. The Kalasaya stairway is a well-worn megalith, a single block of carved sandstone. Like the Kalasaya mound, the Sunken Courtyard is walled by standing stones and masonry infill. In this case the stones are smaller and sculptured heads are inset in the walls. Several stelae are placed in the center of the 30 m square courtyard.

The largest terraced step pyramid of the city, the Akapana, was once believed to be a modified hill, and has proven to be a massive human construction with a base 656 feet square and a height of 55.8 feet. It is aligned perfectly with the cardinal directions. Its base is formed of beautifully cut and joined facing stone blocks. Within the cut-stone retaining walls are six T-shaped terraces with vertical stone pillars, an architectural technique that is also used in most of the other Tiahuanaco monuments. It originally had a covering of smooth Andesite stone, but 90% of that has disappeared due to weathering. The ruinous state of the pyramid is due to its being used as a stone quarry for later buildings at La Paz. Its interior is honeycombed with shafts in a complicated grid pattern, which incorporates a system of weirs used to direct water from a tank on top, going through a series of levels, and finally ending up in a stone canal surrounding the pyramid. On the summit of the Akapana there was a sunken court with an area 164 feet square serviced by a subterranean drainage system that remains unexplained.

Associated with the Akapana are four temples: the Semi-subterranean, the Kalasasaya, the Putuni, and the Kheri Kala. The first of these, the Semi-subterranean Temple, was studded with sculptured stone heads set into cut-stone facing walls and in the middle of the court was located a

now-famous monolithic stela. Named for archaeologist Wendell C. Bennett who conducted the first archaeological research at Tiahuanaco in the 1930's, the Bennett Stela represents a human figure wearing elaborate clothes and a crown. The ancient Tiahuanaco heartland is estimated to have been about 365,000, of whom 115,000 lived in the capital and satellite cities, with the remaining 250,000 engaged in farming, herding, and fishing.

This megalithic doorway is all that remains of the walls of a building on a small mound near the Kalasaya. Much of the readily accessible masonry at the ruin was used to construct the Catholic church in the village. A nearby railroad bridge also has Tiahuanaco stone.

Adjacent to the sunken court, residences of the elite were revealed, while under the patio the remains of a number of seated individuals, believed to have been priests, faced a man with a ceramic vessel that displayed a puma-an animal sacred to the Tiahuanaco. Ritual offerings of llamas and ceramics, as well as high-status goods made of copper, silver and obsidian were also encountered in this elite residential area. The cut-stone building foundations supported walls of adobe brick, which have been eroded away by the yearly torrential rains over the centuries.



THE STATUES OF TIAHUANACU

In 1934 the Peruvianist Wendell C. Bennett carried out several excavations at Tiahuanacu. Excavating in the Subterranean Temple he found two large stone images. One was a bearded statue. Depicted are large round eyes, a straight narrow nose and oval mouth. Rays of lightning are carved on the forehead.

Strange animals are carved up around the head. It stands over 7 feet tall with arms crossed over an ankle-length tunic, which is decorated with pumas around the hem. Serpents ascend the figure on each side, reminding one of the Feathered Serpent culture-hero known as Quetzalcoatl in Central America.

Beside the bearded statue was a much larger statue called in Bennett's report "the large monolithic statue". It is the largest - over 24 feet tall - and probably the most interesting. It was sculpted out of red sandstone, and is generally covered with carved images of various kinds. He holds objects in each hand which are totally unidentifiable, although numerous interpretations have been suggested. It has been removed from the site and now stands in a plaza in La Paz.

What is most interesting is the lower half of its body, which is covered with fish-scales (which upon close inspection are actually fish-heads).

In truth all of these gods - no matter what civilization you are reading about - were the same person / soul - creating realities based on Sacred Geometry - the same characters playing different roles in different places.

This monolithic piece of work has a number of designs scattered over its surface, many of which resemble the running winged-figures found on the Gate of the Sun, only with curled-up tails. Also the "Weeping god" is depicted on the sides of the head of the statue. This is in addition to the tears already depicted on the cheeks of the monolith's face. The Weeping god seems to be a major theme at Tiahuanacu. One wonders what made their deities so sad. Other designs, although very artistic, are rather hard to describe.

There are numerous other statues which have been found at Tiahuanacu, several of which have found their way into various museums. Most have the incomprehensible stiff designs scattered about on their surfaces in the typical Tiahuanacu style. Some are rather large, and others are small. Depictions of toxodons and several other extinct creatures are plentiful at Tiahuanacu. The images of these extinct animals are understandable on pottery and textiles - they could be copied by anyone from the stone monuments dotting the area.

#### THE KALASASAYA TEMPLE

The most important edifice for dating purposes is the Kalasasaya ("Place of the Vertical Stones"). It is built like a stockade with 12 foot high columns jutting upward at intervals, each of these being carved into human figures.

In the northwest corner stands the Gateway of the Sun, and in the southwest corner is "the idol".

## The Idol

This is one of two large anthropomorphic figures standing in the southwest corner of the Kalasasaya Temple. This one faces the entrance and is placed on the central axis. The andesite stone used at the ruins was transported from 100 kilometers distance. The sandstone was quarried about 10 miles from the site. With the exception of the Sun Gate, it is the most picturesque of the sculptures at Tiahuanacu, since its 7-foot height is almost covered with hieroglyphic-like carvings. No one knows if these carvings represent a form of writing or are merely decorative. Should these carvings prove to be a form of symbolic writing, what a story they might tell! The statue popularly known as El Fraile is almost devoid of carvings.

Some researchers have concluded that the ancients constructed the site with astronomical alignments in mind called Celestial Observatories.

As the sun rises each day it moves along the horizon and it rises in a different spot. To measure this movement they built the temple itself as a giant clock to tell them how the progression of the sun was proceeding. We can use those same astronomical alignments to date the site.

On the first day of spring the sun rose exactly through the center of the archway of the temple. Based on the layout of the temple he deduced that on the first day of winter and the first day of summer the sun should rise over each of the huge cornerstones. But this is not the case. The position of the sun was, for some reason slightly outside the corner markers. The solstice markers are not misaligned.

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### POSNANSKY'S DATING TECHNIQUE

Professor Posnansky was familiar with the fact that the ancient Egyptians built many temples which incorporated astronomical alignments with certain celestial bodies for religious reasons. Early on he realized that the purpose of the Kalasasaya was to determine certain important solar alignments. Some simple investigations began to uncover near-alignments; then it was only a matter of "turning back the astronomical clock" until the alignments lined up perfectly.

One might wonder why Posnansky would suspect such an extreme age for these ruins that could cause him to look for such a thing as astronomical alignments? First of all, he couldn't miss the fact that the ruins in general were covered by a thin layer of lime deposits, indicating they had been underwater for a considerable period of time. Also, certain parts of the ruins were deeply buried in sediments, which indicated that a stupendous wave of water had washed over the entire area (the altiplano is almost totally devoid of rain). Posnansky suggested the Biblical Flood (which cast a shadow over all of his other accomplishments) as the responsible agent.

In addition, the depiction of extinct Pleistocene animals, the traces of an ancient shoreline, and finally, the paradox of a seaport existing at an altitude of 12,500 feet above sea level, lead Posnansky to look for other indications that these ruins might be extremely old. He discovered alignments with the sun which were slightly "out of true," but which lined up perfectly once the skycharts were moved back in time, and this led to intensive astronomical studies.

Prof. Posnansky summed up his 50 year study in a 4 volume work entitled Tiahuanacu, The cradle of American Man first published in 1945. He explains his theories, which are rooted in archeoastronomy, as follows. Since Earth is tilted on its axis in respect to the plane of the solar system, the resulting angle is known as the "obliqueness of the ecliptic".

One should not confuse this with another astronomical phenomenon known as Precession of the Equinoxes, as critics of Posnansky have done. If viewed from the Earth, the planets of our solar system travel across the sky in a line called the plane of the ecliptic. At present our Earth is tilted to cause this angle to be around 23 degrees and 27 minutes, but this is not constant. The Earth's axis oscillates slowly between 22 degrees and 1 minute to an extreme of 24 degrees and 5 minutes. This cycle (repeating itself from one extreme to the other and back) takes roughly 41,000 years to complete. The alignments at the Kalasasaya temple depicts a tilt of the Earth's axis amounting to 23 degrees, 8 minutes, 48 seconds, indicating a date of 15,000 B.C.

Between 1927 and 1930 Prof. Posnansky's conclusions were studied intensively by a number of authorities. Dr. Hans Ludendorff (Director of the Astronomical Observatory of Potsdam), Friedrich Becker of the Specula Vaticana, Prof. Arnold Kohlschutter (astronomer at Bonn University), and Rolf Muller (astronomer of the Institute of Astrophysics at Potsdam) verified the accuracy of Posnansky's calculations and vouched for the reliability of his conclusions.

The conventional practice of dating Tiahuanacu as beginning c. 200 A.D. and collapsing c. 1000 A.D. started with Wendell Bennett's excavations, which turned up numerous examples of pottery, small statues and other artifacts. Since it is common for later arrivals to be awed by massive ruins sometimes attributing their origin to supernatural beings, thus replicating the "sacred" images on their own pottery and textiles.

There is one solution that can satisfy all of the above mysteries regarding the ruins of Tiahuanacu. This is none other than the geological cataclysm that inaugurated the Pleistocene Extinction, which effected the entire globe geologically and climatically. Thus, if Tiahuanacu was built before the Pleistocene Extinction, which occurred at the end of the last ice age.

### Radiocarbon Database for Andes, geographical index

Bolivia

Site	Date BP	Sample Id
Buena Vista Mine	25000	Hv-87
Chiripa	3480±180	Beta-31291

Chiripa	3240±130	P-129
Chiripa	3210±170	GX-4057
Chiripa	3190±120	RL-496
Chiripa	3170±120	RL-495
Chiripa	2970±120	P-145
Chiripa	2900±140	RL-491
Chiripa	2850±110	RL-494
Chiripa	2820±110	RL-493
Chiripa	2810±180	RL-492
Chiripa	2725±100	GX-3595
Chiripa	2550±116	P-126
Chiripa	2468±133	P-115
Chiripa	2460±165	GX-4059
Chiripa	2386±114	P-125
Chiripa	2385±165	GX-3596
Chiripa	2377±110	P-116
Chiripa	2318±113	P-143B
Chiripa	2300±155	GX-4058
Chiripa	2291±115	P-124
Chiripa	2281±113	P-142
Chiripa	2275±116	P-141
Chiripa	2240±90	Beta-31920
Chiripa	2235±240	I-8314
Chiripa	2193±111	P-144
Chiripa	2177±112	P-143A
Chiripa	1937±104	P-117
Chiripa	1928±105	P-118
Cliza	1680±300	M-510
Cliza-Chullpapata	1850±90	Hv-116
Colchani	3520±600	W-3695
Cruzpata	2400±80	Tx-1818B
Cruzpata	2320±50	Tx-1818A
El Tambo	1850±65	GX-17572
El Tambo	1650±65	GX-17573
Gondunovia	510±60	Gd-4821
Huancarani	3160±110	GaK-1037
Huancarani	2750±100	Hv-121



Huancarani	2300±80	GaK-1039
Huancarani	2200±80	GaK-1038
Icla-Chullpamoko	1000±170	Hv-115
Icla-Chullpamoko	850±90	Hv-114
Kanasa	175±150	M-740
Karaparial	2280±80	Gd-6619
Karaparial	990±100	Gd-6623
Karaparial	890±80	Gd-4820
Kericala	900	M-1049
Khopi	2520±85	GX-14637
La Paz Ri.	38000	W-949
Lago Titicaca	9620±90	GrN-12677
Laguna Bolivia	1100±90	Gd-6627
Laimina	2290±70	GX-17574
Mesadilla	540±110	Tx-1819A
Mesadilla	380±200	Tx-1819B
Mizque	930±100	B-550
Mizque	840±100	B-449
Omereque	900±200	M-509
Patapatani	9200±250	W-367
Potosi	8960±180	TK-73
Salla	410±150	M-737
Santa Lucia	2040±60	Tx-1817A
Santa Lucia	1550±330	Tx-1817B
Sehuencas	2925±70	GX-17576
Sehuencas	2610±80	GX-17575
Sokotina	3098±60	P-1134
Tiwanaku (Tiahuanaco)	3530±120	GaK-194
Tiwanaku (Tiahuanaco)	2530±200	B-489
Tiwanaku (Tiahuanaco)	2410±140	GaK-53
Tiwanaku (Tiahuanaco)	2400±200	B-488
Tiwanaku (Tiahuanaco)	2190±130	GaK-52
Tiwanaku (Tiahuanaco)	2100±200	B-490
Tiwanaku (Tiahuanaco)	1990±110	GaK-192
Tiwanaku (Tiahuanaco)	1866±62	P-534
Tiwanaku (Tiahuanaco)	1850±90	GaK-193
Tiwanaku (Tiahuanaco)	1817±103	P-123

Tiwanaku (Tiahuanaco)	1750±100	GaK-195
Tiwanaku (Tiahuanaco)	1707±93	P-149
Tiwanaku (Tiahuanaco)	1702±103	P-120
Tiwanaku (Tiahuanaco)	1692±104	P-150
Tiwanaku (Tiahuanaco)	1653±61	P-532
Tiwanaku (Tiahuanaco)	1645±80	Hv-19
Tiwanaku (Tiahuanaco)	1630±130	Hv-18
Tiwanaku (Tiahuanaco)	1576±104	P-147
Tiwanaku (Tiahuanaco)	1460±200	P-119
Tiwanaku (Tiahuanaco)	1423±175	P-121
Tiwanaku (Tiahuanaco)	1226±100	P-120A
Tiwanaku (Tiahuanaco)	1120±140	INAH-972
Tiwanaku (Tiahuanaco)	1090±60	ETH-5639
Tiwanaku (Tiahuanaco)	1090±85	ETH-5640
Tiwanaku (Tiahuanaco)	949±98	P-146
Tiwanaku (Tiahuanaco)	778±133	P-533
Tiwanaku (Tiahuanaco)	630±110	GaK-51
Tiwanaku (Tiahuanaco)	295±192	P-531
Tiwanaku (Tiahuanaco)	240±80	Hv-17
Valle Ibirza	2810±70	GX-17570
Valle Ibirza	2475±70	GX-17571
Valle Ibirza	2430±65	GX-17569
Yuraj Molino	2925±80	GX-15145

## HIGH"-TECH FARMING AT TIAHUANACO

One of Tiahuanaco's (or Tiwanaku's) many puzzles has been how food for such a large city was grown at an altitude of circa 3,850 meters (12,600 feet) in the frosty, windswept Bolivian Andes. This problem along with the fabulous stonework and extensive ruins have precipitated theories involving extraterrestrial visitors and an age for the site in the hundreds of thousands of years.

At least the food-supply puzzle now seems to be in hand. Stereoscopic aerial photographs show in startling detail:

"...immense, curvilinear platforms of earth...these fields form elevated planting surfaces ranging from five to 15 meters wide and up to 200 meters long...Extensive and nearly continuous tracts of these fields -- all of which have been abandoned for centuries -- run from the edge of Lake Titicaca to about 15 kilometers inland, and form virtually the only topographic relief in the broad, gradually sloping plain."

Some of the raised fields are remarkably sophisticated in design. At the base is a layer of cobblestones for stability. These are covered by a 10-centimeter layer of clay. On top of the clay

are three distinct layers of sorted gravel; all capped by rich organic topsoil. These fields were simultaneously an aquifer for the fresh water percolating down from the surrounding hills and a barrier to the brackish water from Lake Titicaca. Even at Tiahuanaco's altitude, these fields could have grown potatoes, oca, or ulluco and the chenopod grains, as well as quinowa and caniwa. Tiahuanaco and its satellite cities could have been fed with enough left over for export. Not bad for farmers 2,000 years ago!

(Kolata, Alan L.; "Tiwanaku and Its Hinterland," *Archaeology*, 40:36, January/February 1987.)

### Genesis as told by the Incas

The story of this genesis as told by the Incas, the last native lords of the Andes, is redolent with miracles. As the story goes, Viracocha, the great creator god, rose from the deep, cold waters of the mystical inland sea stranded high in the Andes. He strode with purpose from Lake Titicaca to the sacred precincts of Tiahuanaco, where he undertook the primordial act of human creation.

Leaving the island on Lake Titicaca, Viracocha passed by the lake to the mainland taking with him two servants . . . He went to a place now called Tiahuanaco in the province of Collasuyu, and in this place he sculptured and designed on a great piece of stone all the nations that he intended to create. This done, he ordered his two servants to charge their memories with the names of all the tribes that he had depicted, and of the valleys and provinces where they were to come forth, which were those of the whole land.

He ordered that each one should go by a different road, naming the tribes, and compelling them all to go forth and people the country. His servants, obeying the command of Viracocha, set out on their journey and work. One went by the mountain range which they call the heights over the plains on the South Sea. The other went by the highlands which overlook the mountain ranges that we call the Andes, situated to the east of the said sea. By these roads they went, saying with a loud voice, "Oh you tribes and nations, hear and obey the order of Tici Viracocha Pachayachac, which commands you to go forth and multiply and settle the land." Viracocha himself did the same along the road between those taken by his two servants, naming all the tribes and places by which he passed. At the sound of his voice every place obeyed, and people came forth, some from lakes, others from springs, valleys, caves, trees, rocks and hills, spreading over the land and multiplying to form the nations which are today Peru.

For the Inca, recounting their myth of genesis, Tiahuanaco was the *pacarina*: the holy place of human emergence.

The Creator of the Andean world was an imagemaker; he skillfully sculptured the many nations of humankind in stone at Tiahuanaco, and then called them to life from the heart of the earth. Even today in that ancient place of origins, tourists wander through the shattered, graven images of creation scattered across the ground. Unaware of what lies beneath their feet, they tread upon the Creator's cosmic handiwork. Viracocha himself still stares implacably over the land and the people he created at the dawn of time. His imperious face is enshrined on the "Gateway of the Sun," the native Andean world's most perfect image of divinity. Viracocha gazes eternally to the east, to the rising sun, from Tiahuanaco's Temple of the Kings, the monumental structure known

in Aymara as *Kalasitas*, the Place of Standing Stones. His vision seems fixed on the distant horizon emphatically marked by the saw-toothed, shimmering white peaks of Mount Illimani. Arrayed in splendor, the Creator still presides over the abandoned halls of Tiahuanaco's kings. He wears a resplendent crown, fashioned from the very rays of the sun. He poses regally on a sacred, triple-terraced pyramid, holding a lightning bolt in his right hand, and an *atlatl*, the Native American spear thrower, in his left hand. Within the pyramid, we see the characteristic U shape of a cave, opening upward. We realize then that Viracocha's dramatic stage is not a simple, man-made temple, but rather a supernatural pyramid. The Creator stands on the sacred mountain pyramid from which the waters of all life flow.

In exquisite irony, the original text of Andean Genesis lies unrecognized, obscured under the lichen-encrusted faces of the granite statues that haunt the ruins of Tiahuanaco. What we have left to speak to us about the original beliefs of the ancient Andean peoples are written texts created by the Spanish; texts which purport to faithfully record the beliefs of the ancients, but remain little more than distorted simulacra. These Spanish versions of native Andean oral literature caricature native beliefs and twist them with more than a little Christian morality and cosmological outlook.

Tici Viracocha Pachayachachic was more than an aesthete, a carver and shaper of humanity. He was a god of action, a creator and destroyer of many worlds: the Shiva of the Andes. Before successfully creating the world of humans, Viracocha annihilated two prehuman worlds; first by fire and then again by flood. But the Creator, at last, established permanent cosmological order in Tiahuanaco. He carved the images of nations. Then, with the help of two faithful subjects, he called forth humanity from the natural world. Viracocha commanded the various tribes of man to emerge from the sacred landscape of "springs, valleys, caves, trees, rocks and hills," finally bestowing on each its natural name. Even at the dawn of time, Andean identity was inextricably bound to sacred places and to sacred names. Like Chrisostomos Choque and the yatiris of the contemporary Aymara world who call the achachilas by name, Viracocha subdues the wild, natural world with his voice, with the generative power of naming. Viracocha, the first shaman of the Andean world, expertly manipulates the tools of the seers' trade. He creates the universe with his voice and with his memory.

In true Andean fashion, humanity emerged not from a utopian Garden of Eden, but from the hard, living rock and water of the natural world. In this great tale of Andean Genesis, Viracocha shapes and reshapes humanity in the forge of trial and tribulation. In the latter half of the sixteenth century, Antonio de la Calancha preserved another version of the genesis story. This myth again recounts the sequential destruction of two pre-human worlds, first by fire and then again by flood, by the creator, here called only Pachayachachic, the "Invisible Lord." Pachayachachic unleashed his fury upon the inhabitants of these worlds when they directly began to worship the forces of nature water and springs, mountains and rocks rather than the Creator himself. Only a few who had not given themselves over to the ecstatic worship of natural forces escaped Pachayachachic's wrath by retreating to protected redoubts on the highest mountain peaks. After the waters receded, these survivors were charged with repopulating the land. In time, these too lapsed into animistic worship and the Creator responded by turning them into stone. Finally, according to Calancha's version of the myth, "it is said that until now Pachayachachic had not created the sun, nor the moon, nor the stars but that he made them now in Tiahuanaco and in the Lake of Titicaca."

After abortive attempts subverted by the infidelity of his subjects, the Creator at last establishes permanent cosmological order in Tiahuanaco. From chaos and rebellion, the natural and social orders are reintegrated. The sun, moon, and: constellations are created at the place of origins and the era of mankind begins. The passage of these celestial bodies through the heavens creates Time itself. Their regular movement through the night sky becomes the astronomical guide by which humans mark the annual cycle of the seasons. Stars and man become synchronized. By observing the stars, the planets, the sun, and the moon, humans now possess the knowledge to interpret and intercept the flow of natural forces for their own benefit.

Still other versions of Andean Genesis at Tiahuanaco were recorded by Juan de Betanzos (1551), and Cristobal de Molina (1553). In the priceless, early version of Andean Genesis preserved by Betanzos, the world creator, here named Contiti Viracocha, emerges from Lake Titicaca and creates "the sun and the day, and the moon and the stars" at Tiahuanaco. Viracocha orders "the sun to move in its path" and so the time of mankind begins. After calling out people from caves, rivers, and springs scattered through the mythical landscape of creation time, Contiti Viracocha furiously turns some into stone for sacrilegious behavior. Then, beginning the act of creation again, the Creator fashions a new race of people to populate the earth. He created "a certain number of people and a Lord to govern over them and many pregnant women . . . and the children that they had in cradles, all of whom were made from stone." Contiti Viracocha dispatches these people of stone to the distant corners of the Andean world. "In this fashion," the Creator made "all the people of Peru and its provinces there in Tiahuanaco."

Viracocha keeps with him in Tiahuanaco only two faithful companions who become his sacred messengers and his divine memory. He charges his messengers to remember the names of all the people he created, as well as the precise location ("the springs and rivers and caves and mountains in the provinces") from which they will emerge after their creation in Tiahuanaco. Then he sends his divine messengers in opposite directions out into the newly created world to call forth the new race of humans: "One he sent to the part and province of Condesuyu, that is, to the left hand side standing in Tihuanacu with one's back to where the sun rises . . . the other he sent to the part and province of Andesuyo, that is, to the right hand side standing in the manner indicated, with the back to where the sun rises."

In Cristobal de Molina's version of the same myth, these two culture heroes are the Andean Adam and Eve: the primeval male-female pair and the children of Viracocha. Like the other variants on the theme of genesis, the events of the myth begin after a universal flood: ". . . all the created things perished through him [Viracocha] except for a man and a woman, who remained in a box, and when the waters receded, the wind carried them to sierra Guanaco [Tiahuanaco] . . ." Viracocha orders the pair to remain in Tiahuanaco, and gives them, as surrogates of the Creator, dominion over the people they are charged with calling forth from the sacred landscape. The female of the original couple, called the ymay mama Viracocha, is given domain over the mountainous lands, while the male, the tocapa viracocha, receives the mandate over the peoples of the plains and lowlands. Viracocha first creates the natural world, and then organizes it into complementary halves: the people of the mountains and the people of the plains.

The variations of the genesis myth recorded by Betanzos and Molina not only identify Tiahuanaco as the *pacarina*, the sacred place of origin for the physical universe, but also as the central point of partition of the social universe. The concept of duality, the world and all things in it divided into two parts, was deeply embedded in the worldview of ancient Andean peoples. Notions of duality still shape the mind of the native Andean peoples. In these myths, recorded during the death throes of the Inca empire, Tiahuanaco represents a kind of boundary marker, the

point of cleavage between two archetypal social groups. To the ancients, Tiahuanaco was the revered center where complementary, but potentially competitive, social groups merged in a shared cultural identity. But who were these social groups? Where did they come from?

In his classic treatise on the natives of the New World, the Spanish cleric Bernabe Cobo informs us that before the Lake Titicaca region was conquered by the Inca during the mid-fifteenth century, the original name for Tiahuanaco was Taypi Kala. As Cobo explains it, Taypi Kala meant "the stone in the center"; the natives ascribed this name to the site because they considered the city to be in "the center of the world, and that from there the world was repopulated after the flood." According to our earliest dictionary of the Aymara language, compiled by the Italian Jesuit Ludovico Bertonio in 1612, *taypi* refers to something situated in the middle. But the term *taypi* does not merely denote a central location in space or time. Within the more subtle textures of meaning, *taypi* refers to a place, a zone, or a quality where two distinct things converge. For instance, Aymara Indians living today on the eastern side of the Bolivian Andes use the term *taypi* to refer specifically to the area on the mountain slopes where corn and potato farming converge. This is an important zone of agricultural production defined by the altitude at which both corn and potato farming is viable. This altitude, ranging from about 1800 to 3000 meters above sea level, incorporates the richest and most fertile regions of the Andean world. Here the concept of *taypi* emphasizes the quality of the melding of opposites (corn versus potato; grain versus tuber) to form a productive whole.

During the sixteenth century, we know that the Aymara Indians organized their social and physical landscape in a sacred geography redolent with symbolic associations. According to Aymara ways of thinking, their entire world was divided into two halves: Urcosuyu and Umasuyu. Urcosuyu referred to the mountain peaks and to the high, arid, rolling lands to the west of Lake Titicaca. Umasuyu, on the other hand, was the fertile valleys to the east of Lake Titicaca, from the lake edge into the Cordillera Real and beyond to the spectacular incised gorges and lush subtropical landscapes of the Amazonian watershed. In Aymara, *urco* conveys the sense of maleness and solidity. The people of the Urcosuyu were constantly in motion, nomadic pastoralists tending vast herds of llamas and alpacas. They moved freely across the roof of the Andean world in pursuit of fresh pasture and watering holes for their animals. In the mind of the Aymara, the inhabitants of the Urcosuyu were associated supernaturally with the celestial spherewith lightning, with thunder, with the spirit world of the sky. Dwellers in Urcosuyu were thought to possess the masculine qualities of virility, aggressiveness, and stoicism. They were a people as hard as the stones of their mountain world. The people of the Umasuyu, on the other hand, practiced a sedentary, agricultural lifestyle, and enjoyed fishing and hunting along the shores of Lake Titicaca. Uma itself means water in the Aymara language, and the inhabitants of Umasuyu were truly people of the lake. They were associated supernaturally with the underworld, with the watery domain of the spirits in the heart of the earth. Uma conveyed notions of passivity and domesticity and evoked the organic fertility of females. Between these two ecological and conceptual poles, between Urcosuyu and Umasuyu, between the People of the Mountains and the People of the Lake, was the *taypi*, the essential zone of convergence. The *taypi* that connected these two distinct social and physical halves of the Aymara world was Lake Titicaca itself. From Lost Realm of the Aymara (1996), pages 65-72

“Near lake Titicaca, on the plains of Tiahuanaco, in Peru, are the remains of what has been generally esteemed as the most ancient temple in South America, and which was religiously copied by the Incas, in their sacred edifices; and according to the authorities, it was an enormous terraced pyramid, faced with stone, and dedicated to the Creator of *the* Universe. The Temple of the Sun at Pachacamac was built upon an artificial hill or mound. (*American Antiquities*,

Bradford. p. 165.)

### **Mystery of The city of Tiahuanaco**

The city of Tiahuanaco is situated near the southern shore of Lake Titicaca, in Bolivia. Even in ruins, it is an impressive site. Its principal structures include a huge stepped pyramid of earth faced with cut andesite (the Akapana Pyramid) and a rectangular enclosure known as the Kalasasaya, constructed of alternating stone columns and rectangular blocks. The entrance to the Kalasasaya is a monolithic gateway decorated with carved figures.

Tiahuanaco is an example of engineering so monumental that it dwarfs even the work of the Aztecs. Stone blocks on the site weigh anything up to 65 tons. They bear no chisel marks, so the means by which they were shaped remains a mystery. The stone itself came from two different quarries. One supplied sandstone and was situated 10 miles away. It shows signs of having produced blocks weighing up to 400 tons. The other supplied andesite and was located 50 miles away, raising the question of how the enormous blocks were transported in an age before the horse was domesticated in South America.

Close examination of the structures shows an unusual technique behind their building. The stone blocks were notched, then fitted together so that they interlocked in three dimensions. The result was buildings strong enough to withstand earthquakes.

Until very recently, orthodox archaeologists labeled Tiahuanaco a ritual site. The reason was that it was built as a port. It has docks, it has quays, it has harbors. But they are docks, quays and harbors that can't be used by any ship. Tiahuanaco is situated 13,000 feet above sea level and is miles from the nearest water. Faced with this mystery, the historians solved it by deciding Tiahuanaco was never lived in. It was, rather, a massive monument to ancient gods, built as a port, presumably, so souls could sail to heaven. (6) This idea, like the Tiahuanaco harbors, no longer holds water. By 1995, new archaeological discoveries clearly showed it was once not only a bustling metropolis, but also the capital of an ancient empire extending across large portions of eastern and southern Bolivia, north-western Argentina, northern Chile and southern Peru.

One of its most extraordinary accomplishments was a unique system of agriculture that involved the creation of raised planting surfaces separated by small irrigation ditches. These ditches absorbed sunlight and prevented crops from freezing, even on the high Altiplano. Algae collected from the ditches was used as fertilizer. The discovery of this ancient system has proven a godsend for modern Bolivian farmers who have found it gives greatly increased yields over modern methods.

The excitement of the recent archaeological finds has diverted attention from the original mystery - why would the Tiahuanacans build a working port 13,000 feet above sea level? One answer may be that they didn't.

There is considerable controversy about the age of Tiahuanaco. Some scholars argue that building started around 150 BC and the city continued to grow until the latter part of the first millennium AD. Others insist it's much older and was probably in place by the second millennium BC. Firmly in the latter camp are Arthur Posnansky, an archaeologist whose findings were endorsed by the Bolivian government, and Rolf Muller, a German astronomer with an interest in the site. Posnansky was the first to suggest the Kalasasaya enclosure functioned as an astronomical observatory, a thesis that is now widely accepted by his peers.

Although both these dates have proven too much for the archaeological consensus to swallow, they would. But if Tiahuanaco existed before then, it would have been a sophisticated maritime city, more or less contemporary with Plato's lost Atlantis.

## The Atlantis Enigma

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The city of Tiahuanaco is situated near the southern shore of Lake Titicaca, in Bolivia. Even in ruins, it is an impressive site. Its principal structures include a huge stepped pyramid of earth faced with cut andesite (the Akapana Pyramid) and a rectangular enclosure known as the Kalasasaya, constructed of alternating stone columns and rectangular blocks. The entrance to the Kalasasaya is a monolithic gateway decorated with carved figures.

Tiahuanaco is an example of engineering so monumental that it dwarfs even the work of the Aztecs. Stone blocks on the site weigh anything up to 65 tons. They bear no chisel marks, so the means by which they were shaped remains a mystery. The stone itself came from two different quarries. One supplied sandstone and was situated 10 miles away. It shows signs of having produced blocks weighing up to 400 tons. The other supplied andesite and was located 50 miles away, raising the question of how the enormous blocks were transported in an age before the horse was domesticated in South America.

Close examination of the structures shows an unusual technique behind their building. The stone blocks were notched, then fitted together so that they interlocked in three dimensions. The result was buildings strong enough to withstand earthquakes.

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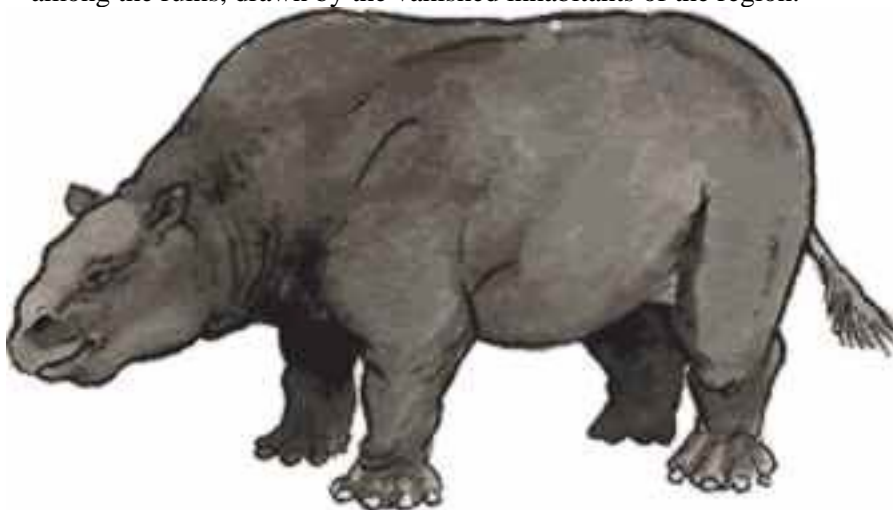
mystery - why would the Tiahuanacans build a working port 13,000 feet above sea level? One answer may be that they didn't.

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(from The Mystery of Atlantis)

"Another inexplicable cyclopean ruin, that of the city of Tihuanaco, on the shores of Lake Titicaca, in Bolivia, was found abandoned by the first Spaniards who arrived there. It was a city built of enormous stone blocks, some of them weighing up to 200 tons, fastened together by silver bolts (These silver bolts were taken by the Spanish conquerors, causing the buildings to collapse during subsequent earthquakes) Stone blocks weighing 100 tons had been sunk into the earth as foundations for the supporting walls of these buildings, and door frames 10 ft high and 2 feet thick had been carved from single blocks of stone. According to local legends, the city had been built by the gods. One might believe that the builders were superhuman, because the enormous ruins were located at an altitude of 13,000 feet and located in an arid area now incapable of supporting the large population necessary to build such massive buildings."

"Some South American archaeologists consider that Tihuanaco (no one knows what its builders called the city, as there are no records available) was built at a time when the Land was almost 2 miles lower than it now is. In fact, an ancient and deserted seaport is located nearby. This theory is based on changes in the Andean Ridge, as interpreted by deposits of calcareous lime or "water mark" lines on cliffs and mountains, and on the assumption that that section of the Andes and Lake Titicaca were thrust upward, destroying and emptying the city, as well as other centers of this prehistoric culture. Remains of mastodons, toxodons, and giant sloths found in strata nearby indicate this change of altitude. They could not have lived at the present height. anymore than could the population necessary for building such a city have supported itself in such a high and arid zone. Pictures of these animals have been found on ceramics among the ruins, drawn by the vanished inhabitants of the region."



Drawing of Toxodon

These animals are of a tropical nature and could not have lived at such an altitude as nearly 13,000 ft. They have found vases showing them, skeletons and drawings of these animals near Tihuanaco

Pictures and Artifacts









The Area of the Lost Sea of The Andes



Present Geography of The Lost Sea of The Andes

## THE LOST SEA OF THE ANDES

Delair, J. B., and Oppe, E. F. in *The Path of the Pole*, Charles H. Hapgood, Chilton Book Co., Philadelphia, 1970.

Outstanding among the unsolved problems of the recent geological history of South America are those connected with that part of the Cordillera where Bolivia and Peru meet.

Arthur Posnonsky of La Paz observed:

Titicaca and Poopo, lake and salt-bed of Coipasa, salt beds of Uyuni——several of these lakes and salt—beds have chemical compositions similar to those of the ocean. He pointed out that Lake Titicaca is. . . full of characteristic [saltwater] molluscs, such as *Palude—strina* and *Ancylus*, which shows that it is, geologically speaking, of relatively modern origin.

Hans S. Bellamy, who gave the problem of the salinity of this region very considerable thought, had the following to say:

The region in which the feeders of Lake Titicaca rise consist almost exclusively of old crystalline, and younger volcanic rocks; Triassic formations, from which salt is usually derived through extraction, are markedly absent.

Hence the presence of so much salt in the Bolivian Tableland can only be accounted for by postulating a former connection of the great lacustrine basin with the Ocean, and by assuming the eventual evaporation of this body of water when the connection with the Ocean was at last severed.

The modern oceanic character of the faunas of these lakes and the chemical composition of the salt deserts support this conclusion. Additional confirmation is to be found in the recent age of the strand—lines left by this ancient sea on the slopes of the mountains enclosing the *Alti—piano*. Bellamy called this body of water the *Inter—Andean Sea*. Indeed, when H. P. Moon wrote his account of the geology of the region he put great stress on the “. . . freshness of many of the strand—lines and the modern character of such fossils as occur.”

A few miles south of Lake Titicaca lies the celebrated ruin site of Tiahuanaco, a collection of shattered edifices of some ancient civilization, itself outside the present inquiry but bearing very definitely upon the radical changes which have occurred throughout the *Altiplano* within geologically very recent times. Of these ruins A. Hyatt Verrill wrote:

Although the ruins are now over thirteen miles from Lake Titicaca there are reasons to think that in the days when the city was occupied it stood on the shores of the Lake itself or on an arm, or bay, for traces of what was apparently a dock or mole are to be seen just north of the principal ruins. If so the lake has receded.

Bellamy refers to a ‘canal’ which appears to have surrounded the principal group of ruins at Tiahuanaco, including the structure referred to hereafter as the “fortress” and adds:

Some explorers of the site of Tiahuanaco are of the opinion that the “canal” was, at most, only a “dry—moat,” and hence will not concede that the peculiar rectangular depressions near the ruins were once actual docks or harbour basins.

But the proofs in favour of our assertion that Tiahuanaco was once a harbour—town are stronger than any of the objections put forward by more superficial observers.

Firstly: there is a rapid fall in level from the edge of the territory which bears culture—remains to the floor of the territory which we say was covered by the waters of the *Inter—Andean Sea*.... The difference in level is about 35 feet north of Tiahuanaco proper....

Secondly: while the soil of the territory which we say was above the water-level contains numerous ceramic fragments and other remains, the former sea—bottom yields practically nothing but the stone—rings with which the fishermen of that time used to weight their nets.

Thirdly: the “dumps” of roughly squared stone blocks [with which the edifices at Tiahuanaco were built] are found only on territory which formerly was sea—bottom.

Bellamy concluded from this last fact that the builders of Tiahuanaco, who obtained their material from quarries many miles distant——for structures which in their skilled and accurate masonry alone remain a mystery——floated their stone blocks in a roughly squared condition on large rafts and that the foundering of these occasionally would leave “dumps” of, in effect, raw material where now found. He made another observation of like force:

Moreover, the “dry—moat” must have been a water bearing canal because the great sewer, which drained the overflow of the pond on the platform of the “fortress” of Akapana discharged into it (ibid.).

The salient proof, and one wholly relevant in present review, that Tiahuanaco possessed a waterfront rests upon discernible traces of alkaline incrustations on the sides of the huge stone blocks forming a part of the above—described mole, harbor—basin, or canal wall. The line of these incrustations corresponds closely with that of the strand—line on the slopes of the surrounding mountains, about which Bellamy wrote:

It was carefully surveyed for a length of about 375 miles.

And then it was established that it is not “straight.” It was found that the Inter—Andean Sea. . . was not merely a Lake Titicaca of higher level extending far to the south, but that its level showed a slant of a most peculiar character in relation to the present ocean— level, or, which amounts to the same, relative to the present level of Lake Titicaca.

The level of the Inter—Andean Sea revealed by the ancient.... strand—line was higher to the north of Tiahuanaco and lower to the south.

The actuality of this peculiarity cannot be doubted, for it was established independently by different persons at different times, using different methods of surveying.

The northernmost point at which the former strand line of the Inter Andean Sea.. . has been surveyed is on the mountain—slopes near Sillustani and to the west of Lake Umayo in the Peruvian department of Puno.

There the former littoral is about 295 feet above the present level of Lake Titicaca, whose surface is 12,506 feet above sea level.

At Tiahuanaco, at the southern end of Lake Titicaca, the same strand line is 90 feet above the level of that great sheet of water, and 4 feet below the coping stones of the parapets of the long dry harbours and docks and canals of that mysterious metropolis. The ancient strand line and the ruined prehistoric city are linked beyond any doubt.

The height of the strand line relative to the ocean level decreases the further south we go. At the northern end of Lake Poopo on the mountain slopes south of Oruro it is 12,232 feet above sea level, or 181 feet above the level of Lake Poopo.



## Ancient life around Lake Titicaca

And indeed high on the Peruvian and Bolivian border lies the evidence. The mystery starts with an ancient waterbed that covers an area of 3200 square miles, being 70 miles wide and 138 miles long.

The inland waterway is called Lake Titicaca and is littered with millions of fossilised seashells. The lake also features a range of oceanic types, as opposed to freshwater marine life. Creatures brought to the surface in fishermen's nets have included examples of seahorses. (40) During the 19<sup>th</sup> Century Professor P. M. Duncan, studying the lake, noted the existence of siluroid, cyprinoid and other marine fishes in the lake. (41)



According to legend, Lake Titicaca (right) is the birthplace of the Inca civilisation. The sun god instructed his children, Manco Capac and his sister-wife Mama Ocllo, to travel until they found a place where a golden rod would sink into the Earth.

Having discovered such a place on an island in Lake Titicaca, they gave birth to the Inca race, the 'children of the sun'. This island, known as the *Island of the Sun*, remains one of the lake's most sacred places and the local Indians still celebrate this 'birthday' with a festival every November 5<sup>th</sup>. (42)

Close by the lake is the ancient city of Tiahuanaco. There is evidence that the city was once a port, having extensive docks positioned right on the earlier shoreline of the now inland waterbed. One of these wharves is big enough to accommodate hundreds of ships. (43)

There would be nothing at all remarkable about Lake Titicaca nor its city were it not for the fact that the lake, resplendent with fossilised sealife and its nearby port city is now situated some 12,500 feet above sea level. At some point in its past, the lake was at sea level, and some immeasurable force has pushed it skywards to rest high in the thin mountain air of the Peruvian Andes where now 'only the graceful reed boats of the native people who still fish its depths and the restless winds of the past disturb the calm surface.' (44)

The City of Tiahuanaco is also full of mystery. Lying at a height of some 13,000 feet, it lies on a plateau that looks like the

surface of a foreign planet. The atmospheric pressure is nearly half as low as at sea level and the oxygen content of the air is similarly small. This isolation and altitude makes the very construction of the city all the more remarkable.

Who had built the city? "I asked the natives whether these edifices were built in the time of the Inca," wrote Pedro Cieza de Leon at the time of the Spanish Conquest, "They laughed at the question, affirming that they were made long before the Inca reign and ... that they had heard from their forebears that everything to be seen there appeared suddenly in the course of a single night." (45) Another chronicler noted the tradition that the stones had been miraculously lifted off the ground, "they were carried through the air to the sound of a trumpet." (46) The historian Garcilaso de la Vega made the following notes about the city soon after the sixteenth century conquest: "We must now say something about the large and most incredible buildings of Tiahuanaco. There is an artificial hill, of great height, built on stone foundations so that the earth will not slide. There are gigantic figures carved in stone ... these are much worn which shows their great antiquity. There are walls, the stones of which are so enormous it is difficult to imagine what human force could have put them in place. And there are the remains of strange buildings, the most remarkable being stone portals, hewn out of solid rock; these stand on bases anything up to 30 feet long, 15 feet wide and six feet thick, base and portal being all of one piece ... How, and with the use of what tools or implements, massive works of such size could be achieved are questions which we are unable to answer ... Nor can it be imagined how such enormous stones could have been brought here." (47)

The 'enormous stones' weighed 100 tons and were topped with other 60-ton blocks for walls. Smooth surfaces with precision accuracy join the blocks of stone which were held together with copper clamps (right), a masonry technique not known to have been used anywhere else in South America, but in use in Ancient Egypt.

There isn't much left now of this ancient city. In the 1500s the Spanish systematically destroyed the buildings, and later many of the stone blocks were looted for houses in a nearby village. More recently some of the remaining stone was taken to lay a railroad right-of-way.

Despite this, what is left is still impressive, boasting a pyramid 700 feet long, 5 feet wide and 50 feet tall. There is also a temple 440 feet long, topped with columns up to 14 feet high that might once have supported a roof.

The precision accuracy of the buildings that remain led to a puzzle that was later to be solved by Professor Arthur Posansky (1874-1946). Posansky (below) had spent much of his life studying the ancient city, including the enclosure known as *Kalასasaya*, one of the main ritual areas of the city. Posansky realised that this area was an astronomical observatory, however the points, which should have marked the winter and summer solstices, appeared to be slightly misaligned. Posansky concluded that if the ancient builders had demonstrated an ability to

create this magnificent city with its precision engineering, it would be unlikely that they would have botched such a fundamental and important feature.

Science, as ever, lent a hand to solve the puzzle. Today, the two tropics are 23.5° north and south of the equator, however, over a cycle of 41,000 years, the position of the tropics changes along with the Earth's roll in space (the obliquity of the ecliptic) from 22.1° to 24.5°.

Posansky therefore set about establishing at what point in history the two observation points were correctly aligned with the enclosure. His result did not make for comfortable reading, for he concluded that the Kalasasaya was constructed some 15,000 years BCE. (48) Actually he was wrong. But not very wrong.

Of course it may well be that the ancient builders, whoever they were, (remembering that the city was constructed before the distant memory of even the Incas) simply made a clumsy attempt at building the enclosure. This appears unlikely, and together with information that the Sphinx and the pyramids have already pushed back our accepted view of when mankind was in a position to undertake vast construction and astronomical projects, an early date may well be valid.

Posansky's work was rejected at first, however his research and conclusions came to the attention of a four man German Astronomical Commission whose purpose was to study archaeological sites in the Andes. This team, led by Dr Hans Ludendorff of the Potsdam Astronomical Observatory studied the Kalasasaya between 1927 and 1930. The team concluded that Posansky was basically right, although they considered that construction probably took place 9300 years BCE rather than Posansky's favoured 15,000 years. (49)

There was also other evidence to support the early dating of the city. One of the most famous features of the ancient city is the '*Gateway to the Sun*'. This feature, nearly ten feet high, 12.5 feet wide and carved out of a single block of stone is adorned with pictures of various animals. Two of which are intriguing.

One of the pictures is of an elephant, for elephants were unknown on the American continent; there have been no such animals since about 10,000BCE when a creature with tusks and trunk, the *Cuvieronius*, became

extinct. Yet someone had seen such a beast and carved it's image onto the Gateway, supporting Posansky's and others redating of the founding of the city.

The second picture was recognised by Professor Denis Saurat of France. He noted what was quite clearly the head of a toxodon, a prehistoric animal now extinct. According to old (Linnean) classification, the Toxodon and the family Toxodontidae were South American notoungulates of the Pliocene and Pleistocene eras. (The Pliocene Epoch preceded the Pleistocene and ended about 1.6 million years ago).

The Toxodon itself is described as rhinoceros-like, about 2.75 meters long fully grown, and probably a mixed browser and grazer.

It is unlikely that Saurat misidentified the animal for images of toxodons are also featured on ancient Tiahuanaco pottery and even in nearby sculptures. (50) But how could mankind have drawn pictures of such ancient and extinct creatures unless he had seen them?

The answer to this puzzle may lie in a prehistoric waterbed in Texas, USA. But first, a quick resume of time.

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Lake Titicaca



Lake Titicaca Ancient Bowl